

1. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{13225}{25}}$$

- A. Irrational
 - B. Not a Real number
 - C. Integer
 - D. Rational
 - E. Whole
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2. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(7 - 5i)(3 - 4i)$$

- A. $a \in [1, 5]$ and $b \in [41, 51]$
 - B. $a \in [1, 5]$ and $b \in [-43, -38]$
 - C. $a \in [40, 44]$ and $b \in [12, 17]$
 - D. $a \in [40, 44]$ and $b \in [-15, -7]$
 - E. $a \in [21, 24]$ and $b \in [20, 23]$
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3. Simplify the expression below and choose the interval the simplification is contained within.

$$12 - 16^2 + 7 \div 6 * 5 \div 2$$

- A. $[270, 274.4]$
- B. $[267.4, 269.4]$
- C. $[-245.1, -241.9]$
- D. $[-242.5, -240.2]$
- E. None of the above

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4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{225}{196}} + 4i^2$$

- A. Nonreal Complex
 - B. Not a Complex Number
 - C. Rational
 - D. Pure Imaginary
 - E. Irrational
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5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-5 - 2i)(3 + 4i)$$

- A. $a \in [-18, -11]$ and $b \in [-11, -5]$
 - B. $a \in [-32, -21]$ and $b \in [13, 19]$
 - C. $a \in [-9, -5]$ and $b \in [24, 31]$
 - D. $a \in [-32, -21]$ and $b \in [-20, -11]$
 - E. $a \in [-9, -5]$ and $b \in [-29, -19]$
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6. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 6 \div 9 * 5 - (20 * 3)$$

- A. $[-58.3, -57.8]$
- B. $[-56.4, -53.1]$
- C. $[-61.6, -58.2]$
- D. $[61.6, 64.1]$

E. None of the above

7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 44i}{-2 - 3i}$$

- A. $a \in [-27.5, -25.5]$ and $b \in [-15, -13.5]$
B. $a \in [0.5, 3]$ and $b \in [-19.5, -18.5]$
C. $a \in [-20.5, -17.5]$ and $b \in [4.5, 7.5]$
D. $a \in [-240.5, -239]$ and $b \in [4.5, 7.5]$
E. $a \in [-20.5, -17.5]$ and $b \in [72.5, 74.5]$
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8. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{400}{49}} + \sqrt{156}i$$

- A. Not a Complex Number
B. Rational
C. Pure Imaginary
D. Nonreal Complex
E. Irrational
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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-36 + 77i}{-1 + 8i}$$

- A. $a \in [650.5, 653]$ and $b \in [2, 5]$
B. $a \in [9.5, 12]$ and $b \in [210, 211.5]$

- C. $a \in [-10, -7.5]$ and $b \in [-7, -5.5]$
 - D. $a \in [34.5, 37.5]$ and $b \in [9, 10]$
 - E. $a \in [9.5, 12]$ and $b \in [2, 5]$
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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{10}{0}}$$

- A. Rational
 - B. Not a Real number
 - C. Irrational
 - D. Integer
 - E. Whole
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